February 6-12, 2004

<P>The Terra spacecraft is operating nominally. All five instruments are in science mode.</P>

<P>A routine roll maneuver for support of MODIS lunar calibration was conducted on February
10, 2004.</P>

<P>A meeting on the subject of TDRSS KSA dropouts was held on February 10 between GSFC and White Sands personnel with Space Network and Terra Flight Operations Team support. This meeting is being held regularly each Tuesday.</P>

<P>The team continues to diagnose the cause of K-band dropouts where the High Rate Demodulators experience a momentary loss of main carrier lock of 1 to 2 seconds in duration. This problem has been ongoing since 2002 and appears to be isolated almost exclusively to the TDRS West (TDW) KSA-1 Antenna. This requires the Terra On-line Engineers to identify when the problem has occurred and to perform replays of the science data. TDW K-band dropouts have been well characterized through testing and analysis by personnel at White Sands and appear to be caused by the TDRS Electronics or the TWTA.</P>

<P>Frame sync losses are identified only by monitoring an increase in the frame sync loss counter during a playback and comparing expected and actual CADU counts. Each hit varies and results in 10,000 to 19,000 missing CADUs (between 0.5 and 0.92 seconds of playback). The first known occurrence was on December 10, 2003 (DOY 344); however, these problems were unnoticed until the beginning of January 2004, when there were requests for science data reprocessing when the data were found to be missing. Although still difficult to identify in real time, the Flight Operations Team is monitoring additional parameters which may indicate when the problem is occurring. When observed in real time, the On-line Engineer replays the science data. Only after evaluating the data can a determination be made as to whether all the science data were captured.</P>

<P>This problem was initially confined to TDRS Spare (TDS); however, it was observed on TDW starting on January 16. This is when the White Sands Ground Network was reconfigured (TDS removed from SGLT-1 with TDW reconfigured to SGLT-1). This isolated the problem to the SGLT-1 KSA-1 hardware path. Testing found errors with the KSA-1 High Rate Switch which resulted in a decision on January 29th to replace the clock card. This problem seems to have stopped or reduced in frequency since replacing the clock card.</P>

<P><B>Plans:</B>
A routine roll maneuver for support of MODIS lunar calibration will be conducted on March 10, 2004.</P>